

Application Serial No. 10/798,001
In reply to Office Action of September 11, 2007

Docket: CU-3633

REMARKS/ARGUMENTS

Reconsideration is respectfully requested.

Claims 13-21 were pending in the present application before this amendment. By the present amendment, claims 13-15 have been amended. Claims 22-25 have been previously withdrawn. No new matter has been added.

Support for these amendments to claims 13-15 can be found in the specification at page 15 lines 10-13.

In the office action, claims 13-15 and 19-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 3,979,184 (Giaever) in view of U.S. Patent 5,412,087 (McGall) and in light of U.S. Patent 3,982,908 (Arnold). Also in the office action, claims 16-18 stand rejected under 35 USC 103 as being unpatentable over Giaever in view of McGall further in view of Noblett (US 6,362,004).

For the reasons presented below, the Applicant respectfully traverses these rejections, and submits that the claims, as they now stand, are in allowable form.

The Examiner's attention is respectfully directed towards the limitations of independent claims 13-15, as amended, that require that the refractive index of the anti-reflection layer (i.e., the fine particles) is smaller than the refractive index of the substrate. Thereby, the transmittance of the anti-reflection layer to the excitation light is further increased in the substrate for the bio-microarrays recited in the respective amended claims 13-15. Therefore, the signal intensity of the fluorescent molecule can be made stronger and reflection of unnecessary excitation light can also be suppressed. As a result, the analysis accuracy of the bio-microarray is

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further increased.

In this respect neither Giaever, McGall, Arnold and Noblett disclose or suggest this requirement that the refractive index of the anti-reflection layer (i.e., the fine particles) is smaller than the refractive index of the substrate. Thus even if Giaever, McGall, Arnold and Noblett are combined, then a person skilled in the art would not be able to achieve the substrate for bio-microarray recited in these amended claims 13-15.

Therefore the Applicant respectfully submits that Giaever, McGall, Arnold and Noblett in whole or in combination, do not teach, disclose or suggest, inter alia, all of the limitations now found in independent claims 13-15, as amended. More specifically, Giaever, McGall, Arnold and Noblett do not teach or suggest, in whole or in combination, that the refractive index of the anti-reflection layer (i.e., the fine particles) is smaller than the refractive index of the substrate.

Instead Giaever teaches a diagnostic device having a substrate 10, a first layer 12 of transparent dielectric material adhered to the substrate 10, a transparent second layer 13 of metal adhered to the first layer 12; and a monomolecular layer of biological particles 14 overlying on the second layer 13. However Giaever does not teach or suggest, inter alia, that the refractive index of the anti-reflection layer (i.e., the fine particles) is smaller than the refractive index of the substrate.

Regarding McGall, the Examiner uses McGall to teach probes immobilized in an array format, in order to provide discrete locations for distinctive probes, which can then be used to perform a simultaneous, parallel assay to detect different targets. The Applicant respectfully finds that McGall is silent in teaching or

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suggesting, inter alia, that the refractive index of the anti-reflection layer (i.e., the fine particles) is smaller than the refractive index of the substrate.

Regarding Arnold, the Examiner uses Arnold to teach that gold layers of about 1 Angstrom to 1000 Angstroms is naturally porous. The Applicant respectfully finds that Arnold is silent in teaching or suggesting, inter alia, that the refractive index of the anti-reflection layer (i.e., the fine particles) is smaller than the refractive index of the substrate.

Regarding Noblett, the Examiner uses Norblet to teach fiducial marks located in predetermined locations with respect to a microarray sample, in order to position and align the sample with greater precision for detection purposes. The Applicant respectfully finds that Noblett is silent in teaching or suggesting, inter alia, that the refractive index of the anti-reflection layer (i.e., the fine particles) is smaller than the refractive index of the substrate.

As per MPEP §2143.03, in order to establish a prima facie case of obviousness, the combined prior art references must teach or suggest all of the claimed limitations. Since Giaever, McGall, Arnold and Noblett are all silent with regards to teaching or suggesting, inter alia, that the refractive index of the anti-reflection layer (i.e., the fine particles) is smaller than the refractive index of the substrate, then Giaever, McGall, Arnold and Noblett, in whole or in combination, cannot support an obviousness rejection to independent claims 13-15, as amended.

The Applicant therefore respectfully submits that independent claims 13-15, as amended, are in allowable form, and respectfully requests that the Examiner withdraw this rejection to independent claims 13-15.

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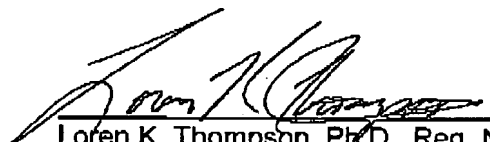
Claims 19-21 ultimately depend from independent claims 13-15 and, as such incorporate by reference all of the claim limitations contained therein, including the above limitations which have already been shown to be absent from Giaever, McGall, Arnold and Noblett. Accordingly, dependent claims 19-21 are also believed to be in allowable form as being dependent upon an allowable base claim. The Examiner is respectfully requested to withdraw these obviousness rejection to dependent claims 19-21.

For the reasons set forth above, the Applicant respectfully submits that claims 13-21, now pending in this application, are in condition for allowance over the cited references. Accordingly, the Applicant respectfully requests reconsideration and withdrawal of the outstanding objections and rejections and earnestly solicits an indication of allowable subject matter.

This amendment is considered to be responsive to all points raised in the office action. Should the Examiner have any remaining questions or concerns, the Examiner is encouraged to contact the undersigned attorney by telephone to expeditiously resolve such concerns.

Respectfully submitted,

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Date



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